WHAT IS CLAIMED IS:

1. A method for producing complex shaped articles comprising:

(a) trimming, cutting and shaping a honeycomb core to a desired size and shape, said honeycomb core having a top surface, a bottom surface, a front end, a rear end and opposed sides;

(b) deforming said honeycomb core at ambient temperature to impart a contoured shape along the longitudinal axis between said front and rear ends and across the transverse axis between said opposed sides of said honeycomb core; and,

(c) permanently setting the shape of said honeycomb core such that a contoured arc is defined in said honeycomb core extending along said longitudinal axis and a contoured arc is defined extending across said transverse axis.

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2. The method of claim 1 which includes bonding a least one layer of a fiber reinforced resin to said top surface, said bottom surface and said opposed sides of said permanently set honeycomb core.

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3. The method of claim 1 wherein the contoured arc extending along said longitudinal axis and the contoured arc extending along said transverse axis together define a concave, symmetrical contour on the upper surface of said honeycomb core and a convex, symmetrical contour on the bottom surface of said honeycomb core.

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5   4. The method of claim 4 wherein the contoured arc extending along said longitudinal axis and the contoured arc extending across said transverse axis together define a convex, symmetrical arc between said opposed sides on one of said surfaces, said convex arc being significantly higher at one of said opposed sides and tapering therefrom across said transverse axis and along said longitudinal axis to a significantly lower height at the other of said opposed sides.

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5. The method of claim 4 wherein said convex, symmetrical arc is defined on each of said top and bottom surfaces of said honeycomb core material.

15   6. A method for producing complex shaped articles comprising:

(a) trimming a honeycomb core material to a desired size and end shape, said honeycomb core material having a top surface, a bottom surface, a front end, a rear end and opposed sides;

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(b) seating the bottom surface of said sized and shaped honeycomb core material on a fixture, said fixture having a top wall, a bottom wall, opposed end walls and opposed side walls, said top wall having a contoured configuration defined therein;

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(c) applying pressure at ambient temperature to the top surface of said seated honeycomb core material until said honeycomb core material adapts to the contour configuration in the top wall of said fixture;

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(d) cutting said seated honeycomb core material to a desired thickness from said front end to said rear end on a horizontal plane substantially parallel to the longitudinal axis of said honeycomb core material; and,

(e) conformally bending said cut honeycomb core material by applying

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pressure at ambient temperature to the opposed sides of said cut honeycomb core material until a desired arcuate configuration is attained along the longitudinal axis from the front end to the rear end of said cut honeycomb core material and across the transverse axis between the opposed sides of said cut honeycomb core material.

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7. The method of claim 6 wherein said contoured configuration in the top wall of said fixture is a concave, symmetrical contour defined between said opposed end walls and said opposed-said walls.

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8. The method of claim 6 wherein the opposed side edges of said honeycomb core material are chamfered prior to cutting said honeycomb core material on said fixture.

The method of claim 6 wherein said honeycomb core material is a member

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selected from the group consisting of a semi-rigid paper material and a semi-rigid, thermoplastic material.

The method of claim 8 wherein a coating of fiber reinforced resin is applied to the top and bottom surfaces of said arcuately configured honeycomb core

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material.

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7.
~~11.~~ The method of claim ~~11~~ **1.** wherein a coating of a resin mixture is applied to said opposed side edges of said arcuately *molded* ~~configured~~ honeycomb core material.

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~~12.~~ The method of claim ~~10~~ **5.** wherein said fiber reinforced resin is a glass or Kevlar reinforced epoxy resin.

8.
~~13.~~ The method of claim ~~11~~ **7.** wherein said resin mixture comprises an epoxy resin, polyamide spheres, phenolic spheres, or hollow glass spheres.

4.
~~14.~~ The method of claim ~~11~~ **1.** wherein said *an* arcuate configuration in said honeycomb core material defines a concave, symmetrical contour on the top surface of said honeycomb core material and a convex, symmetrical contour on the bottom surface of said honeycomb core material.

9.
~~15.~~ The method of claim ~~11~~ **1.** wherein said *an* arcuate configuration in said honeycomb core material defines a convex, symmetrical arc extending along the longitudinal axis from the front end to the rear end of said honeycomb core material and across *a* the transverse axis between the opposed sides of said honeycomb core material, said convex arc being significantly higher at one of said opposed sides and tapering therefrom across said transverse axis and along said longitudinal axis to a significantly lower height at the other of said opposed sides.

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~~16.~~ The method of claim ~~15~~ **9** wherein said arcuate configuration and said convex, symmetrical arc are defined on each of said top and said bottom surfaces of said honeycomb core material.

add 2
add 1

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